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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM ERIC CORR

Appeal 2006-002214
Application 09/344,169¹
Technology Center 2100

Decided:² May 27, 2009

Before JAMES D. THOMAS, LEE E. BARRETT, and THU A. DANG,
Administrative Patent Judges.

BARRETT, *Administrative Patent Judge.*

DECISION ON APPEAL

¹ Filed June 24, 1999, titled "Determining Timing of Integrated Circuits", which claims the foreign priority benefit of United Kingdom Application 98 14379.5, filed July 2, 1998.

² The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

This is a decision on appeal under 35 U.S.C. § 134(a) from the final rejection of claims 1-16. We have jurisdiction pursuant to 35 U.S.C. § 6(b).

We reverse.

STATEMENT OF THE CASE

The invention

The invention relates to a method and apparatus for determining the timing for a synchronous integrated circuit.

The claims

Claim 1 is reproduced below:

1. A method of determining the timing for a synchronous integrated circuit, the circuit including a multiplicity of clocked elements interconnected by signal paths, the method comprising:

1) Forming predictions for timing delays in said signal paths in the integrated circuit;

2) Selecting a first such path, tracing wires in the integrated circuit forming the path, hereinafter referred to as victim wires, and determining adjacent and crossing wires thereto, hereinafter referred to as aggressor wires;

3) For each aggressor wire, determining the amount of electromagnetic coupling to the victim wires of the first path;

4) Dividing the aggressor wires into a plurality of categories depending on the clocked timing of the aggressor wires in relation to the clocked timing of the victim wires;

5) Allowing a user to select a mode of operation; and

6) For each victim wire, modifying the predictions formed in step (1) based on the effects of the aggressor wires only in those categories corresponding to the mode of operation selected by the user.

The references

Petschauer	US 5,596,506	Jan. 21, 1997
Carlson	US 5,983,006	Nov. 9, 1999

Tong Gao and C.L. Liu, *Minimum Crosstalk Channel Routing*, 15 IEEE Trans. on Computer-Aided Design of Integrated Circuits and Systems 465-474 (1996)("Gao").

The rejections

Claims 1-16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Gao or Petschauer.

Claims 1-16 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Carlson.

Although the rejections under 35 U.S.C. § 112 have been withdrawn, several "objections" to the claims are treated in this decision as "rejections" on the merits.

Claim groupings

Appellant groups the claims as follows, where the claims in each group having multiple claims stand or fall together:

- GROUP 1: Claims 1, 2, 7, and 8
- GROUP 2: Claim 3
- GROUP 3: Claim 4
- GROUP 4: Claim 5
- GROUP 5: Claim 6
- GROUP 6: Claims 9 and 10
- GROUP 7: Claims 11 and 14
- GROUP 8: Claims 12 and 15
- GROUP 9: Claims 13 and 16

The Examiner states that Appellant never previously argued the claims as other than a single group and therefore the Examiner considers the claims as a single group (Ans. 6). Appellant argues that the Examiner cites no authority for his assertion that Appellant is limited on appeal to making arguments that previously have been made to the Examiner and that Appellant is not aware of any such authority (Reply Br. 3).

The proposed new rules of practice for the Board, 73 Fed. Reg. 32938, 32950 (June 10, 2008) (available on USPTO Web site), would require appellant to identify where the argument was made in the first instance to the examiner or state that the argument has not been previously made to the examiner. 37 C.F.R. § 41.37(o). However, these rules are not yet in effect. The Examiner cannot treat the claims as a single group where they have been separately grouped and argued by Appellant.

The Examiner states that Appellant does not argue why the claims are separately patentable, but merely repeats the claim language (Ans. 4).

In an anticipation rejection, as in this case, if Appellant argues that a limitation is not taught in the references, and the Examiner's rejection does not point out where in the references the limitation is alleged to be taught so that appellant can address why that teaching does not meet the claim language, it is sufficient to argue that a limitation is not taught.

PRINCIPLES OF LAW

"Anticipation requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim. A prior art disclosure that 'almost' meets that standard may render the claim invalid under § 103; it does not 'anticipate.'" *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983).

ANALYSIS

Comment on multiple rejections

The Examiner relies on three anticipation rejections without any explanation of why cumulative rejections are necessary. The USPTO discourages cumulative rejections. *See Manual of Patent Examining Procedure* (MPEP) § 706.02 (8th ed. rev. 6, Sep. 2007) ("Prior art rejections should ordinarily be confined strictly to the best available art."). Cumulative rejections are burdensome on applicants and the Board. Moreover, where some of the rejections are without merit, the tendency is to assume that all are without merit or that the examiner has no idea whether a rejection is good or bad. "In the case of multiple rejections of a cumulative nature, the Board may also remand for selection of the preferred or best ground." MPEP § 1211 (8th ed., rev. 3, Aug. 2005). While we have reviewed the prior art rejections in this case, the Examiner should, in the future, pick the best rejection or, at most, best two rejections to avoid a remand.

Objections and withdrawn rejections

The Examiner has withdrawn the rejections under 35 U.S.C. § 112 (Ans. 4). The Examiner maintains the objections to the claims and asserts that these issues relate to petitionable subject matter that is only reviewable by petition and not by appeal (Ans. 7-8).

Appellant argues that most of the claim objections directly parallel the Examiner's previous § 112 rejections, which have now been withdrawn. It is argued that "[m]erely restating the same rejection as an objection does not change its essential character and, accordingly, each such claimed objection is believed to be proper appealable subject matter" (Reply Br. 2).

"Objections" relate to matters of form rather than substance. The Board's jurisdiction is limited to those matters involving the rejection of claims. *In re Hengehold*, 440 F.2d 1395, 1404 (CCPA 1971). "Objections" are reviewable by petition to the Commissioner. Nevertheless, we agree with Appellant that the Examiner here improperly characterizes the claim problems as "objections" when they relate to matters of substance. Therefore, in order to expedite prosecution, we will review the merits of the "objections" as if they were rejections.

The Examiner "objects" to claims 9 and 10 because they use the term "perturb," which the Examiner states is a nonstandard term in the art. The Examiner suggests using the term "electromagnetic coupling" and states that he "does not understand Appelants' [sic] reluctance to clearly claim that which they regard/argue as their invention" (Ans. 8). Appellant argues that

it is clear that "perturbation" refers to perturbation through electromagnetic coupling (Br. 5).

The Examiner's statement that Appellant is not clearly claiming what he regards as his invention indicates a § 112 ¶ 2 rejection. While it might be somewhat more descriptive to recite "perturb the signal in the wire" rather than the "perturb the wire," the specification describes the invention using the terminology "perturb the wire", and therefore, we conclude that the term is not indefinite. This rejection of claims 9 and 10 is reversed.

The Examiner "objects" to the limitation of "allowing a user to select a mode of operation" in claims 1 and 8, and suggests that it should recite the user actually selecting a mode of operation (Ans. 8). Appellant argues that this would result in an inconsistency with claims 1 and 8, because the steps of claim 1 and the means of claim 8 are not intended to be performed by the user, even though certain of such steps are based on the mode selected by the user (Br. 6).

We do not find that the Examiner's "suggestion" of alternative language rises to the level of the claim being indefinite. This rejection of claims 1 and 8 is reversed.

The Examiner "objects" to claim 6 as allegedly failing to further limit the subject matter of claims 1 and 3, and as making step (6) of claim 1 inoperative (Ans. 8). Appellant argues that claim 6 further limits claims 1 and 3 by requiring that no modification is performed in step (6) of claim 1 (Br. 6).

We agree with Appellant that claim 6 further limits claims 1 and 3 and does not make claim 1 inoperative. The rejection of claim 6 is reversed.

Anticipation

Appellant argues that the rejections are in error because none of the references describe allowing a user to select a mode of operation that controls what categories of aggressor wires will be utilized in modifying previously formed timing delay predictions (Br. 10). The Examiner asserts that Appellant's basic argument is that the prior art "does not disclose categorizing the crosstalk interaction into likely, possible or unlikely to cause crosstalk" (Ans. 11) and points out where the prior art is asserted to describe different categories of crosstalk interaction (Ans. 11-12). The Examiner further asserts that "[m]erely creating arbitrary (what is the criterion for the categorization?) and artificial categories between likely, possible or unlikely to cause crosstalk is not a patentable step above the prior art teachings" (Ans. 13) and "is merely routine experimentation in a well known art" (Ans. 13). The Examiner misunderstands what limitations are being argued and therefore does not address the argument.

Representative claim 1 recites "4) Dividing the aggressor wires into a plurality of categories depending on the clocked timing of the aggressor wires in relation to the clocked timing of the victim wires", where the "categories" may be "likely, possible or unlikely to affect the timing of the victim wire", as recited in dependent claim 3. Claim 1 further recites "5) Allowing a user to select a mode of operation; and 6) For each victim

wire, modifying the predictions formed in step (1) based on the effects of the aggressor wires only in those categories corresponding to the mode of operation selected by the user." Selecting a "mode of operation" is explained in the Specification:

If . . . the analysis mode is set to pessimistic, and all significant effects on timing are to be taken into account, then . . . [the timing delay is] based on predicted perturbation from "likely" and "possible" data sets. If however the only the most significant perturbances are to be taken into account, i.e. a less accurate method of timing analysis, then . . . the analysis mode is set to normal, and . . . [the timing delay is] based on the predicted perturbation from the "likely" data set . . .

Spec. 7: 6-12. That is, the *modes* are "pessimistic" and "normal," which affect which *categories* of "likely, possible, or unlikely" are used in forming predictions of timing delays.

The Examiner's rejection discusses "categories," but does not address "modes of operation" and accordingly does not respond to Appellant's argument. The Examiner's discussion that creating "categories" is "not a patentable step" (Ans. 13) and involves "merely routine experimentation", is obviousness reasoning which is not appropriate in an anticipation rejection. In any case, however, this reasoning does not address the limitation of "modes of operation." While the references all deal in some way with crosstalk, and while Perschauer and Carlson use the terminology of "victim" and "aggressor" common to this application, we do not find a description of anything corresponding to user selected "modes of operations". Also, we do not have any discussion by the Examiner of any special interpretation or reading of the references that might address the "modes of operation"

Appeal 2006-002214
Application 09/344,169

limitations. Accordingly, Appellant has satisfied his burden on appeal of showing error in the Examiner's rejection. Claims 1 and 8 both contain the limitation at issue and, accordingly, the rejection of claims 1 and 8, and their dependent claims 2-7 and 9-14, is reversed.

CONCLUSION

The rejections of claims 1-14 are reversed.

REVERSED

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